

## BRIEFER NOTES

### A freak flower of the Chinese sacred lily

LEROY K. HENRY

Among a normal cluster of flowers upon a Chinese sacred lily (*Narcissus Tazetta*, var. *orientalis*) growing in a bowl of water, there appeared twin flowers on one of the peduncles. Normally each peduncle bears a single flower, but this one was broadened at the tip and bore two distinct flowers. These flowers were entirely separate, even to the ovaries, which were merely held together by the common epidermal covering. The tube of

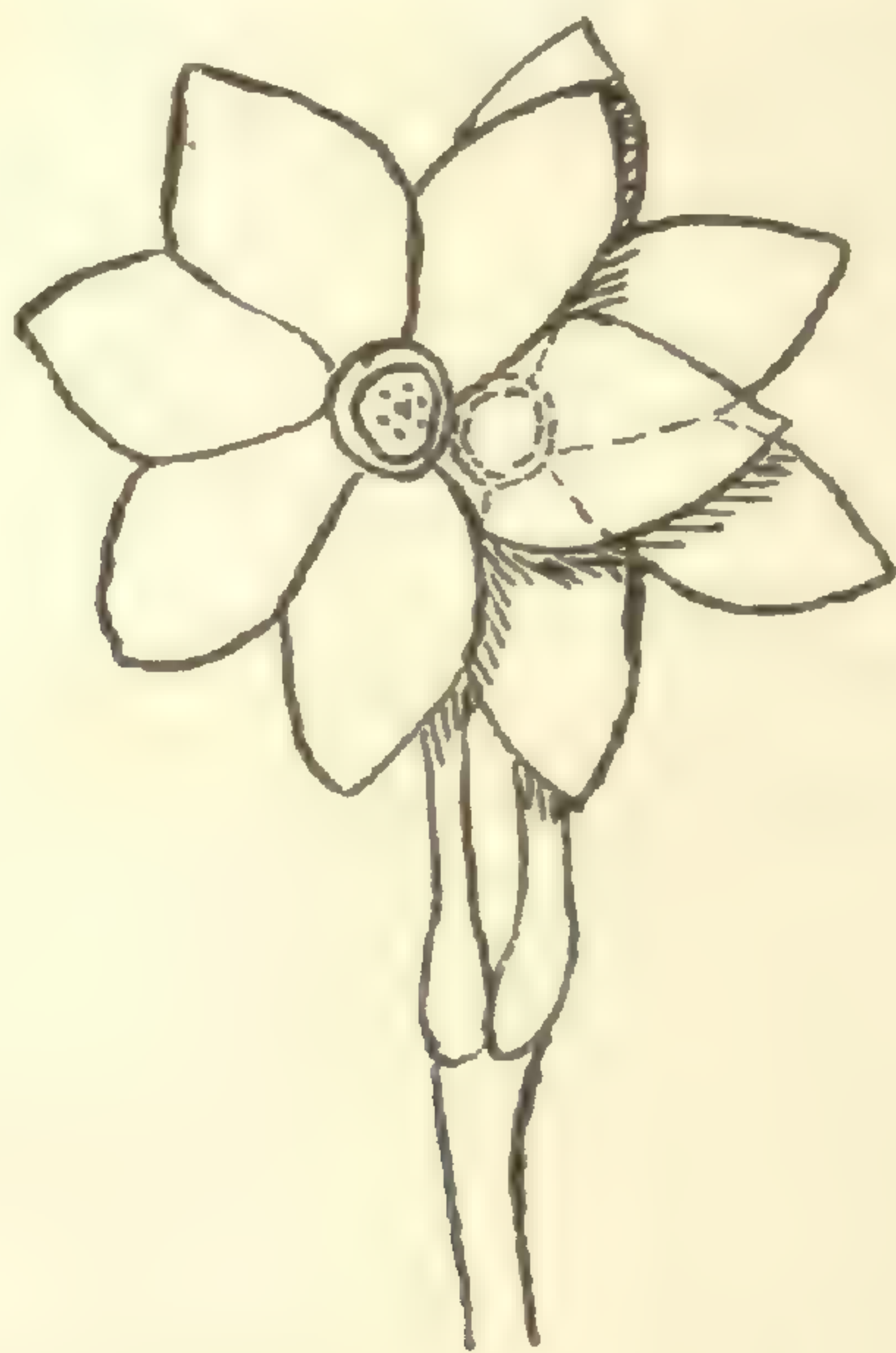


FIGURE 1. Twin flower of Chinese Sacred Lily.  
(*Narcissus Tazetta* var. *Orientalis*.)

the one flower was larger than that of the other and, in growth had split longitudinally half of its length; also there seven stamens instead of the normal number of six. According to Worsdell's "Principles of Plant Teratology," this phenomenon is called floral fasciation. Fasciation varies in all degrees from flowers with abnormal number of floral parts, such as increase of stamens, calyx, corolla, or all three, to separation into two distinct flowers. For the plant in question, I have found no report of this type of fasciation in which there are two separate flowers. Often there is one flower with increased number of petals or sepals and two distinct ovaries, or one with a common



calyx and the remaining floral organs separate. This condition of the twin flowers evidently arose from the longitudinal division of the primordial initial cell, which gave rise to two distinct ovaries with their accessory parts in place of the customary ovary.

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### Another Catskill occurrence of *Potentilla tridentata*

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At least two occurrences, in the Catskill Mountains, of the Three-Toothed Cinquefoil, *Potentilla (Sibbaldiopsis) tridentata*, may now be recorded, where previously there had been no record of the species in any catalogue of the flora of that region. Some time ago I stated in this journal that I had not found it on about twenty of the higher Catskills summits, although it is found on lower elevations in the same latitude or even farther south, such as Mount Beacon, 1640 feet on the Hudson opposite Newburgh, and on High Point, on Kittatiny Mountain, 1807 feet, in New Jersey; and at elevations of 4000 feet or higher, in Virginia and North Carolina. An occurrence at 4000 feet was also reported by Dr. R. L. Harper, I think, in Georgia.

After my statement appeared, Mr. William Gavin Taylor, of Arlington, New Jersey, found the plant in 1930 on the top of the cliffs of Overlook Mountain, on the eastern front of the Catskills in Ulster County, northwest of Kingston, New York. It is a bleak, exposed place, such as the species likes, and it appeared that it flourished there, at about 3000 feet, even though not found as then supposed on other Catskill summits, a thousand feet higher, in the interior of the mountains, which are clothed with dense sub-alpine fir and spruce, and are more protected than the Overlook cliffs.

On Aug. 30, 1931, I found plenty of it, at several points, on the ledges along the trail north of the Catskill Mountain House, in Greene County, at elevations from 2000 to 2400 feet. With it, on one ledge was associated a large bed of Bearberry, *Arctostaphylos uva-ursi*, which is extremely rare in the Catskills, at least in the higher parts, where I have never seen it. Norman Taylor, in his catalogue of the flora of the vicinity of New York,



mentions Bearberry as found in Greene County, and this occurrence north of the Catskill Mountain House may be the basis of that report, as it can easily be reached on the trail from the hotel and would be noticed by anyone acquainted with it.

The beds of *Potentilla tridentata* on these ledges are dense and flourishing. Their elevation is about the same as the colonies of the plant on Alander and Brace Mountains and Mount Everett, on the Taconic Plateau about 40 miles eastward of the Catskill location.

Since it appears from Mr. William Gavin Taylor's and my own report that *Potentilla tridentata* occurs on the exposed outer front of the Catskills, a search of ledges atop the cliffs north and south of Kaaterskill Clove, especially toward the Blackhead Range, where several high cliffs are visible, may disclose still other stands, which I hope to find.

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### Damsel Flies captured by *Drosera*

RAYMOND H. TORREY

I have seen during the past summer, several examples, and heard of another, of the capture by species of *Drosera*, of Damsel Flies, which seemed to me rather large and powerful insects to be taken by these insectivorous plants. At Little Cedar Pond, east of Greenwood Lake, in June, with the class in regional science of Teachers College, Columbia University, I saw a dozen blue damsel flies enmeshed on the leaves of *Drosera rotundifolia*. In some cases more than one plant, in a dense bed of them on the quaking bog that borders the pond, had seized a single insect; and the exudation from the hairs was increasing and the hairs were bending about the body of the insect, in the same manner as they inclose and digest smaller insects. The combination of the bright red hairs with their shining digestive fluid and the bright blue insect was very striking.

Mr. Max A. Elwert, a member of the Torrey Botanical Club, reported to me on Sept. 8, that he found a damsel fly caught on the leaves of *Drosera longifolia*, in a bog along the Davenport branch of Tom's River, in Ocean County, New Jersey. The capture of so large an insect, more than an inch long, by the narrower-leaved *D. longifolia* seems quite a remarkable performance.



## Frost Flowers reported 100 years ago

RAYMOND H. TORREY

Since the reports in TORREYA, of "frost flowers" on *Cunila*, made by me, and the interesting comments and similar reports on them in the last number by Professor H. M. Jennison, of the University of Tennessee and by Dr. R. L. Harper of Tallahassee, Fla., reporting similar occurrences on *Verbesina* and *Pluchea*, I have received from the Missouri Botanical Garden, St. Louis, a copy of its bulletin, for October, 1924, with an article on the subject, containing photographs of large numbers of such ice crystals, in the Garden, on *Verbesina virginica*. The writer of the article says that a hundred years ago Stephen Elliott in "A Sketch of the Botany of South Carolina and Georgia," wrote of the marsh fleabane, *Pluchea*, that on cold frosty mornings, crystalline fibers nearly an inch in length shoot out in every direction from the base of the stem. "It would appear," he says, "as if the remnant of the sap or water, absorbed by the decayed stem, had congealed and had burst in this manner through the pores of the bark. Does this proceed from any essential, quality of the plant or from its structure?"

The Missouri Botanical Garden *Bulletin* also notes that Sir John Herschell, in 1883, found ice crystals on thistle and heliotrope, and the writer of the article says that since that time at least thirty different plants have been recorded as forming frost flowers, "including not only herbaceous annuals and perennials, but trees, such as walnut, pawpaw, Paulownia, etc." But he says that there are only a comparatively few plants in which this phenomenon can take place, and they are those where "the roots must retain their vitality long after the stems have died, and continue to force up water which either freezes on a cut or wound or finds some other outlet through the bark. The soil must contain a sufficient amount of water and the temperature in the soil as well as in the conducting tissues of the plant must be above freezing point, while the temperature of the air must be below the freezing point." Such were the conditions when I found the crystals on *Cunila origanoides* on Kittatiny Mountain, in Warren County, New Jersey last November. While many records may have been reported, possibly in scattered notes in botanical literature, the general manuals do not record



this phenomenon, on any other plant but the Frostweed, *Helianthemum canadense*, which receives its popular name from the occurrence. A definite and complete list of plants displaying such crystals would be interesting and might throw more light on the physical reasons therefor.

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## BOOK REVIEWS

### Johnston's monograph of the genus *Cordia* in Southeastern South America

Under the modest title "Observations," this accomplished specialist in the family *Boraginaceae* contributes a paper (*Contrib. Gray Herbarium XCII*) which well sustains the reputation of that institution for comprehensive and accurate work. The keys to the several sections of the genus, the citations of publication and synonymy and the descriptions of new species are all excellent, as well as the citation of the specimen examined, but the most striking and valuable part of the work is in the extended discussions of the composition of the species. It is a lamentable fact that the taxonomist is usually unable to reach very positive conclusion as to identity from the majority of descriptions, without referring to type specimens, but it would be rather difficult for any careful analyst to be in doubt regarding the identity of his specimen after reading Dr. Johnston's discussion of its essential characters and variations.

Every student of tropical American plants must have been puzzled in his attempts to identify specimens of the difficult genus *Cordia*, even when he has good material for comparison. Dr. Johnston's "observations" regarding variations in the numerous specimens examined should contribute much toward accuracy in future publications of this genus. We cannot help regretting that the author should take so comprehensive a view of the limits of this genus. To the present writer, it seems that the generic distinction between groups which Dr. Johnston regards as sub-genera are greater than those which separate *Cordia* from its relatives. Both accuracy and convenience would seem to dictate the separation of *Cordia*, as here treated, into a number of genera.

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